bladders is of single piece construction.

19. (New) The method as recited in claim 14 wherein the compressibility is adjusted during a printing operation.

IN THE DRAWINGS

Please approve the corrections to Fig. 3 shown in red.

REMARKS

The specification was objected to. The drawings were objected to. Claims 1 to 3 were rejected under 35 U.S.C. § 102(b) to Katz '709. Claims 1 to 10 and 12 were rejected under 35 U.S.C. § 102(e) to Katz '478, and claims 11, 13, 14 and 15 were rejected under 35 U.S.C. § 103.

Claims 1 and 14 have been amended and claims 17 to 19 added.

Reconsideration of the application is respectfully requested.

Specification and Drawing Objections

Applicants thank the Examiner for noticing the numbering inconsistencies.

New numbering has been submitted in paragraphs 19, 22 and 23 and the heat exchanger as described in paragraph 23 is now proposed as shown in Fig. 3. Support is found clearly in paragraph 23, which described the heat exchanger exchanging heat in lines 14.

Withdrawal of the objections and approval of the drawing changes is respectfully requested.

Rejection under 35 U.S.C. 102

Claims 1 to 3 were rejected under 35 U.S.C. § 102(b) as being anticipated by to Katz '709. Claims 1 to 10 and 12 were rejected under 35 U.S.C. § 102(e) to Katz '478

Katz '709 shows a printing roller with a removable sleeve. A hydraulic chamber 40 acts on a cylindrical sleeve 48. Seals 42, 44 seal the sleeve to a cylinder 16.

Katz '478 shows a printing cylinder assembly. A hydraulic chamber acts on sleeves 32, 34 and seals are provided to seal the sleeves 32, 34 to a cylinder journal.

Claim 1 recites a bladder. A bladder, as per standard definition, is an enclosure that can serve as a receptacle for fluids.

The cylindrical sleeves in both Katz references are a perfect sleeves, and could not act on their own as a receptable for fluids.

The bladder of the present invention, which can function on it s own as a fluid receptable, permits the elimination of the sealing rings required by the use of the perfect sleeve in Katz.

Moreover, due to the presence of seals 42, 44, it is clear that one of skill in the art would not be motivated to provide a bladder in the hydraulic chambers of Katz, as the chamber is already sealed.

Withdrawal of the 35 U.S.C. 102 rejections under Katz '709 and Katz '478 is respectfully requested.

Withdrawal of the 102 rejections is respectfully requested.

Rejection of Claims 11 and 13 and under 35 U.S.C. §103

Claims 11 and 13 were rejected under 35 U.S.C. § 103 as being unpatentable over Katz '709 in view of Rau and in view of Katz '478, respectively.

Niether Katz reference nor Rau shows a bladder, as recited in claim 1 and discussed above.

Withdrawal of the rejection under 35 U.S.C. § 103 with regard to claims 11 and 13 is respectfully requested.

Rejection of Method Claims 14 and 15

Claims 14 and 15 were rejected under 35 U.S.C. § 103 as being unpatentable over Katz '709.

Claim 14 as amended recites, among other limitations "at least partially deflating a set of inflatable bladders disposed at an outer region of the blanket cylinder", "inflating the set of

inflatable bladders so that the printing sock fits tightly around the circumference of the blanket cylinder" and "adjusting a compressibility of the printing sock on the blanket cylinder."

Claim 14 thus requires a separate adjusting step independent from the deflating and inflating steps.

While Katz '709 discusses adding and removing pressure on sleeve 48 to fix cylinder 12 (See col 4, line 1 et seq. of Katz '709), Katz '709 does not disclose a step where any compressibility of a printing sock is adjusted at all, and certainly does not disclose a step independent of the inflating step for adjusting the compressibility.

Withdrawal of the rejection under 35 U.S.C. 103 to claim 14 and its dependent claim 15 is respectfully requested.

New Claims

New claims 16 to 19 recite further features not shown in the prior art.

Conclusion

It is respectfully submitted that the present application is now in condition for allowance, and Applicant respectfully requests such action.

Respectfully submitted,

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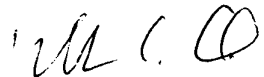
By: 

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VERSION SHOWING CHANGES

IN THE SPECIFICATION

[0019] Blanket cylinder 20 includes cylinder 11, which may be made of a rigid material such as a metal. Bladders 12 are disposed on a circumferential surface of cylinder 11. Bladders 12 may be ring-shaped so that each bladder encircles the circumference of cylinder [12] 11. Bladders 12 are inflatable and may be filled with a fluid A, B, and C, which may be the same or different fluids. The fluid may include air, other gases, water, or other hydraulic fluids. Fluid lines 14 connect bladders 12 to fluid supply regulation units (not shown in Fig. 2). Each of fluid lines A, B, and C may go to the same fluid supply regulation unit or to different fluid supply regulation units so that the pressure inside of the bladders may be individually regulated. Cylinder covering 13 is disposed on the outer surface of bladders 12 to form the outside covering of blanket cylinder 20.

[0022] Fig. 3 shows a schematic cross-section of blanket cylinder 20 and printing sock 21 according to the present invention. Rigid cylinder 11 is rotatably supported by bearings [15] 115. Bladders 12 are ring-shaped and encircle the circumference of rigid cylinder 11. Cylinder covering [6] 13 is attached at its axial ends to rigid cylinder 11, for example by riveting. Fluid lines 14 connect bladders 12 to fluid supply regulation units 15. A rotary union 16 is used to enable cylinder 11 to rotate without interrupting the flow of fluid. Thus, fluid pressure in the bladders 12 can be adjusted while the printing press is running and while the blanket cylinder 20 is rotating. In this embodiment each of the three bladders A, B, and C are individually connected to three different fluid supply regulation units, which can individually regulate the pressure of fluid in the bladders. Thus, the working pressure in each zone (as defined by the width of each bladder) can be adjusted during operation based on print quality requirements and press conditions.

[0023] During operation, waste heat is generated in the nip where the print layer of the print sock comes into contact with the web. Much of this heat can be removed by the web itself. However, in the case of a narrow web, heat generated in end regions of the blanket cylinder where there is no web could be removed by circulating the fluid within the appropriate bladders and cooling it in a heat exchanger [(not shown in Fig. 3)] 100. For example [a] heat exchanger 100 may be connected to (or part of) the fluid supply regulation unit 15, or otherwise connected to fluid lines 14. A temperature feedback loop could be set up to help ensure a constant temperature across the entire nip.

IN THE CLAIMS

1. (Amended) A printing unit comprising:

a rigid cylinder rotatable about an axis of rotation;

a plurality of inflatable bladders disposed on a circumferential surface of the cylinder;

a first fluid supply regulation unit configured to supply a first fluid to a first set of inflatable bladders of the plurality of inflatable bladders and to regulate a first fluid pressure inside the first set of inflatable bladders; and

a flexible cylinder covering disposed over an outer surface of the plurality of bladders.

14. (Amended) A method for mounting a sleeve-shaped printing sock onto a blanket cylinder of an offset printing press, the method comprising:

at least partially deflating a set of inflatable bladders disposed at an outer region of the blanket cylinder;

positioning the sleeve-shaped printing sock over one end of the blanket cylinder so that the printing sock at least partially surrounds a circumference of the blanket cylinder; [and]

inflating the set of inflatable bladders so that the printing sock fits tightly around the circumference of the blanket cylinder; and

adjusting a compressibility of the printing sock on the blanket cylinder.

area].